Fig. 1

NL1:


```
GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC   60
CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA  120
ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG  180
                        M  A  D  T  I  F  G  S  G  N  D  Q     12
TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC  240
 W  V  C  P  N  D  R  Q  L  A  L  R  A  K  L  Q  T  G  W  S    32
GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCGGAGGTG  300
 V  H  T  Y  Q  T  E  K  Q  R  R  K  Q  H  L  S  P  A  E  V    52
GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAGCAGAGA  360
 E  A  I  L  Q  V  I  Q  R  A  E  R  L  D  V  L  E  Q  Q  R    72
ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG  420
 I  G  R  L  V  E  R  L  E  T  M  R  R  N  V  M  G  N  G  L    92
TCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTTCTGC  480
 S  Q  C  L  L  C  G  E  V  L  G  F  L  G  S  S  S  V  F  C   112
AAAGACTGCAGGAAGGTCTGGAAGAGGTCGGGGGCCTGGTTCTACAAAGGGCTCCCCAAG  540
 K  D  C  R  K  V  W  K  R  S  G  A  W  F  Y  K  G  L  P  K   132
TATATCTTGCCCCTGAAGACCCCTGGCCGAGCTGATGAGCCCCAGTTCCGACCTTGGCCC  600
 Y  I  L  P  L  K  T  P  G  R  A  D  E  P  Q  F  R  P  W  P   152
ACGGAACCGGCAGAGCGAGAGCCCAGAAGCTCTGAGACCAGCCGCATCTACACGTGGGCC  660
 T  E  P  A  E  R  E  P  R  S  S  E  T  S  R  I  Y  T  W  A   172
CGAGGAAGAGTGGTTTCCAGTGACAGTGACAGTGACTCGGATCTTAGCTCCTCCAGCCTA  720
 R  G  R  V  V  S  S  D  S  D  S  D  S  D  L  S  S  S  S  L   192
GAGGACAGACTCCCATCCACTGGGGTCAGGGACCGGAAAGGCGACAAACCCTGGAAGGAG  780
 E  D  R  L  P  S  T  G  V  R  D  R  K  G  D  K  P  W  K  E   212
TCAGGTGGCAGCGTGGAGGCCCCCAGGATGGGGTTCACCCAACCCGCGGGCCACCTCTTT  840
 S  G  G  S  V  E  A  P  R  M  G  F  T  Q  P  A  G  H  L  F   232
```

```
GGGTTGCAGAGCAGCCTGGCCAGTGGTGAGACGGGCACAGGCTCTGCTGACCCGCCAGGG   900
 G  L  Q  S  S  L  A  S  G  E  T  G  T  G  S  A  D  P  P  G    252
GGAGGGACAGGCTCTGCTGACCCGCCAGGGGGACCCCGCCCCGGGCTGACCCGAAGGGCC   960
 G  G  T  G  S  A  D  P  P  G  G  P  R  P  G  L  T  R  R  A    272
CCGGTAAAAGACACACCTGGACGAGCCCCCGCTGCTGACGCAGCTCCAGCAGGCCCCTCC  1020
 P  V  K  D  T  P  G  R  A  P  A  A  D  A  A  P  A  G  P  S    292
AGCTGCCTGGGCTGAGGTGTCTGGTGCCTGGAACAGACTTCCCTGTGGAGGATTCCTGCC  1080
 S  C  L  G  *                                                  296
AGACCCTGCCCGGCTCCTCCCTGACCGGTCCTTGTGCCCTCACCAGACACCCTGTTGGCC  1140
ATGACTCAACAAACCAGTGTTGGGAGCCGTCTGCCTCCCCAGCTCAGTGCCTTTCTGCAC  1200
CCCTTCTCTCCTGGGGAGCTGTCTGCATCCGCCACCCCCTCCAACCACTGCCCTCAGCCC  1260
CCGACCTTATTTATTACCCTCCCCTCCCACACCCCCAATCTACCTGGTGATGATTTTAAG  1320
TTTGCGCGTGTCTTGGGTTGGGCTGGGGGGTTTCCCACATGCAGTGTCAGAGGGGCCGCC  1380
CGGTGGGGCTATCTCCGTTGCTATATTAATGGCAAGACTAAATGAAACCTAGGGCACGGC  1440
CTCCGAAGCTGCGTGTGGCCCCTTAGAGGTGAGCATCAGAGCCAGAGCAGTGAGGGGGAG  1500
ACTCACCCACCCTCTCCCTCTCCCTTCAGCTCTGGGAGGCAGGCGCAGTGCCCCCCTCCC  1560
ATGGGCTGGCCCAGGACCGCGGGTGAAACCTGGGTCTGTTTAGTTTCTTTGGTTTTTGTA  1620
TGTTTGTTTGTTTTTGACACAGTCTCGCTTTGTTGCCCAGGCTGGGGTGCAGTGGCACGA  1680
TCGCGGCTCACTGCAACCTCCACCTCCCGGGCTCAAGCGATTCTCTCACCTCAGCCTCCT  1740
GAGTAGGTGGGATTACAGATGCCCGCCACCACACCCAGTTAATTTTTGTATTTTTAGAAG  1800
AGATGGGGTTTCTCCATGTTGGCCAGGCTGGTCTTGAACTCCTGGTCTCAAGTGATCCGC  1860
CCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCACCGCACCCAATCCTATT  1920
AGGTTTCTTTGAATCCCCTCATGGCCTGCCTGGTTTTTGCTCAGCCTGTCTTCAGCTTGA  1980
GGAGCTGGGAAGCTCTGGTGGATGCTATGAACTCACTTGCTGAAGAGCAGCGTTCAGGTG  2040
CATCCCCAGCCAGGGCACGTGGCTCCCTCAGCCATGAATTCACTTCTCTTCAGGAGGTTT  2100
GGCTTGGCATGAAAATACTTCATTCAGAGTATGGGCAAATGCTTCTGGAAAACCCTTCCC  2160
TGAAGAGAGAGAACGTGTGTGTGTGTGTCGGTGATCACACCCTCCCATCCTTCCTGCCTC  2220
CTGCCCCAAACCCCGGGTTCCTGGGTCTGGAAGGGCCTTCTCTCCAAGCTGGGAGCTCCT  2280
```

[redacted]

GGGCCCCCACCATTCACTTTTTGTCCTTGCTGCTGGCAAACAGTAAAGAAACTCACTTTC 2340

CCTGTGGCACGTTATGCTTCAGAATTAAAACAATGAAGATTAAAA 2385

Fig. 2

CL1:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC 60

CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA 120

ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG 180

M A D T I F G S G N D Q 12

TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC 240

W V C P N D R Q L A L R A K L Q T G W S 32

GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCGGAGGTG 300

V H T Y Q T E K Q R R K Q H L S P A E V 52

GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAGCAGAGA 360

E A I L Q V I Q R A E R L D V L E Q Q R 72

ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG 420

I G R L V E R L E T M R R N V M G N G L 92

TCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTTCTGC 480

S Q C L L C G E V L G F L G S S S V F C 112

AAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGCCAGAAG 540

K D C R K K V C T K C G I E A S P G Q K 132

CGGCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGGTCGGGG 600

R P L W L C K I C S E Q R E V W K R S G 152

GCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCCTGAAGACCCCTGGCCGAGCT 660

A W F Y K G L P K Y I L P L K T P G R A 172

GATGACCCCCACTTCCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCCAGAAGCTCT 720

D D P H F R P L P T E P A E R E P R S S 192

GAGACCAGCCGCATCTACACGTGGGCCCGAGGAAGAGTGGTTTCCAGTGACAGTGACAGT 780

E T S R I Y T W A R G R V V S S D S D S 212

GACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTCAGGGAC 840

D S D L S S S S L E D R L P S T G V R D 232

CGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGGATGGGG 900

R K G D K P W K E S G G S V E A P R M G 252

TTCACCCAACCCGCGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGTGAGACG 960

F T Q P A G H L F G L Q S S L A S G E T 272

GGCACAGGCTCTGCTGACCCGCCAGGGGGAGGGACAGGCTCTGCTGACCCGCCAGGGGGA 1020

G T G S A D P P G G G T G S A D P P G G 292

CCCCGCCCCGGGCTGACCCGAAGGGCCCCGGTAAAAGACACACCTGGACGAGCCCCCGCT 1080

P R P G L T R R A P V K D T P G R A P A 312

GCTGACGCAGCTCCAGCAGGCCCCTCCAGCTGCCTGGGCTGAGGTGTCTGGTGCCTGGAA 1140

A D A A P A G P S S C L G * 325

CAGACTTCCCTGTGGAGGATTCCTGCCAGACCCTGCCCGGCTCCTCCCTGACCGGTCCTT 1200

GTGCCCTCACCAGACACCCTGTTGGCCATGACTCAACAAACCAGTGTTGGGAGCCGTCTG 1260

CCTCCCCAGCTCAGTGCCTTTCTGCACCCCTTCTCTCCTGGGGAGCTGTCTGCATCCGCC 1320

ACCCCCTCCAACCACTGCCCTCAGCCCCCGACCTTATTTATTACCCTCCCCTCCCACACC 1380

CCCAATCTACCTGGTGATGATTTTAAGTTTGCGCGTGTCTTGGGTTGGGCTGGGGGGTTT 1440

CCCACATGCAGTGTCAGAGGGGCCGCCCGGTGGGGCTATCTCCGTTGCTATATTAATGGC 1500

AAGACTAAATGAAACCTAGGGCACGGCCTCCGAAGCTGCGTGTGGCCCCTTAGAGGTGAG 1560

CATCAGAGCCAGAGCAGTGAGGGGGAGACTCACCCACCCTCTCCCTCTCCCTTCAGCTCT 1620

GGGAGGCAGGCGCAGTGCCCCCCTCCCATGGGCTGGCCCAGGACCGCGGGTGAAACCTGG 1680

GTCTGTTTAGTTTCTTTGGTTTTTGTATGTTTGTTTGTTTTTGACACAGTCTCGCTTTGT 1740

TGCCCAGGCTGGGGTGCAGTGGCACGATCGCGGCTCACTGCAACCTCCACCTCCCGGGCT 1800

CAAGCGATTCTCTCACCTCAGCCTCCTGAGTAGGTGGGATTACAGATGCCCGCCACCACA 1860

CCCAGTTAATTTTTGTATTTTTAGAAGAGATGGGGTTTCTCCATGTTGGCCAGGCTGGTC 1920

TTGAACTCCTGGTCTCAAGTGATCCGCCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAG 1980

GTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCTGCCTGG 2040

TTTTTGCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTATGAACT 2100

CACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCCTCAGCC 2160

ATGAATTCACTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTCAGAGTATG 2220

GGCAAATGCTTCTGGAAAACCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTGTCGGTG 2280

ATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCCGGGTTCCTGGGTCTGGAAG 2340

GGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTTGTCCTTGCTGC 2400

TGGCAAACAGTAAAGAAACTCACTTTCCCTGTGGCACGTTATGCTTCAGAATTAAAACAA 2460

TGAAGATTAAAA 2472

Fig.3

CL2:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC 60

CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA 120

ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG 180

TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCACTGACTGCACAGCAGT 240

GAACAGGACCAACACAGTCCCTGGTCTTAAAGCACAGGTGGGCAGAGGCTGCAGACGGGC 300

TGGTCGGTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCG 360

GAGGTGGAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAG 420

CAGAGAATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAAC 480

M R R N V M G N 8

GGCCTGTCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTG 540

G L S Q C L L C G E V L G F L G S S S V 28

TTCTGCAAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGC 600

F C K D C R K K V C T K C G I E A S P G 48

CAGAAGCGGCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGG 660

Q K R P L W L C K I C S E Q R E V W K R 68

TCGGGGGCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCCTGAAGACCCCTGGC 720

S G A W F Y K G L P K Y I L P L K T P G 88

CGAGCTGATGACCCCCACTTCCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCCAGA 780

R A D D P H F R P L P T E P A E R E P R 108

AGCTCTGAGACCAGCCGCATCTACACGTGGGCCCGAGGAAGAGTGGTTTCCAGTGACAGT 840

S S E T S R I Y T W A R G R V V S S D S 128

GACAGTGACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTC 900

D S D S D L S S S S L E D R L P S T G V 148

AGGGACCGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGG 960

R D R K G D K P W K E S G G S V E A P R 168

ATGGGGTTCACCCAACCCGCGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGT 1020

M G F T Q P A G H L F G L Q S S L A S G 188

GAGACGGGCACAGGCTCTGCTGACCCGCCAGGGGGAGGGACAGGCTCTGCTGACCCGCCA 1080

E T G T G S A D P P G G G T G S A D P P 208

GGGGGACCCCGCCCCGGGCTGACCCGAAGGGCCCCGGTAAAAGACACACCTGGACGAGCC 1140

G G P R P G L T R R A P V K D T P G R A 228

CCCGCTGCTGACGCAGCTCCAGCAGGCCCCTCCAGCTGCCTGGGCTGAGGTGTCTGGTGC 1200

P A A D A A P A G P S S C L G * 243

CTGGAACAGACTTCCCTGTGGAGGATTCCTGCCAGACCCTGCCCGGCTCCTCCCTGACCG 1260

GTCCTTGTGCCCTCACCAGACACCCCTGTTGGCCATGACTCAACAAACCAGTGTTGGGAGC 1320

CGTCTGCCTCCCCAGCTCAGTGCCTTTCTGCACCCCTTCTCTCCTGGGGAGCTGTCTGCA 1380

TCCGCCACCCCCTCCAACCACTGCCCTCAGCCCCCGACCTTATTTATTACCCTCCCCTCC 1440

CACACCCCCAATCTACCTGGTGATGATTTTAAGTTTGCGCGTGTCTTGGGTTGGGCTGGG 1500

GGGTTTCCCACATGCAGTGTCAGAGGGGCCGCCCGGTGGGGCTATCTCCGTTGCTATATT 1560

AATGGCAAGACTAAATGAAACCTAGGGCACGGCCTCCGAAGCTGCGTGTGGCCCCTTAGA 1620

GGTGAGCATCAGAGCCAGAGCAGTGAGGGGGAGACTCACCCACCCTCTCCCTCTCCCTTC 1680

AGCTCTGGGAGGCAGGCGCAGTGCCCCCCTCCCATGGGCTGGCCCAGGACCGCGGGTGAA 1740

```
ACCTGGGTCTGTTTAGTTTCTTTGGTTTTTGTATGTTTGTTTGTTTTTGACACAGTCTCG  1800
CTTTGTTGCCCAGGCTGGGGTGCAGTGGCACGATCGCGGCTCACTGCAACCTCCACCTCC  1860
CGGGCTCAAGCGATTCTCTCACCTCAGCCTCCTGAGTAGGTGGGATTACAGATGCCCGCC  1920
ACCACACCCAGTTAATTTTTGTATTTTTAGAAGAGATGGGGTTTCTCCATGTTGGCCAGG  1980
CTGGTCTTGAACTCCTGGTCTCAAGTGATCCGCCCGCCTCGGCCTCCCAAAGTGCTGGGA  2040
TTACAGGTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCT  2100
GCCTGGTTTTTGCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTA  2160
TGAACTCACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCC  2220
TCAGCCATGAATTCACTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTCAG  2280
AGTATGGGCAAATGCTTCTGGAAAACCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTG  2340
TCGGTGATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCCGGGTTCCTGGGTC  2400
TGGAAGGGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTTGTCCT  2460
TGCTGCTGGCAAACAGTAAAGAAACTCACTTTCCCTGTGGCACGTTATGCTTCAGAATTA  2520
AAACAATGAAGATTAAAA                                             2538
```

Fig. 4

CL3:

```
GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC    60
CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA   120
ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG   180
                      M  A  D  T  I  F  G  S  G  N  D  Q          12
TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC   240
  W  V  C  P  N  D  R  Q  L  A  L  R  A  K  L  Q  T  G  W  S     32
GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCGGAGGTG   300
  V  H  T  Y  Q  T  E  K  Q  R  R  K  Q  H  L  S  P  A  E  V     52
GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAGCAGAGA   360
  E  A  I  L  Q  V  I  Q  R  A  E  R  L  D  V  L  E  Q  Q  R     72
```

```
ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG  420
 I  G  R  L  V  E  R  L  E  T  M  R  R  N  V  M  G  N  G  L    92
TCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTTCTGC  480
 S  Q  C  L  L  C  G  E  V  L  G  F  L  G  S  S  S  V  F  C   112
AAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGCCAGAAG  540
 K  D  C  R  K  K  V  C  T  K  C  G  I  E  A  S  P  G  Q  K   132
CGGCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGGTCGGGG  600
 R  P  L  W  L  C  K  I  C  S  E  Q  R  E  V  W  K  R  S  G   152
GCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCCTGAAGACCCCTGGCCGAGCT  660
 A  W  F  Y  K  G  L  P  K  Y  I  L  P  L  K  T  P  G  R  A   172
GATGACCCCCACTTCCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCCAGAAGCTCT  720
 D  D  P  H  F  R  P  L  P  T  E  P  A  E  R  E  P  R  S  S   192
GAGACCAGCCGCATCTACACGTGGGCCCGAGGAAGAGTCGTAGGAAGAAAGTGCTGATCC  780
 E  T  S  R  I  Y  T  W  A  R  G  R  V  V  G  R  K  C  *      210
ACGCTGCAGCCTGGATGAGTCCTTGAAAACACCATGCGAAGTGGAAGAAGCCGGAGACGA  840
AAGGCCGCGTGTTGTGTGATCTCATCTATATGAGCAGTGGTTTCCAGTGACAGTGACAGT  900
GACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTCAGGGAC  960
CGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGGATGGGG 1020
TTCACCCAACCCGCGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGTGAGACG 1080
GGCACAGGCTCTGCTGACCCGCCAGGGGGAGGGACAGGCTCTGCTGACCCGCCAGGGGGA 1140
CCCCGCCCCGGGCTGACCCGAAGGGCCCCGGTAAAAGACACACCTGGACGAGCCCCCGCT 1200
GCTGACGCAGCTCCAGCAGGCCCCTCCAGCTGCCTGGGCTGAGGTGTCTGGTGCCTGGAA 1260
CAGACTTCCCTGTGGAGGATTCCTGCCAGACCCTGCCCGGCTCCTCCCTGACCGGTCCTT 1320
GTGCCCTCACCAGACACCCTGTTGGCCATGACTCAACAAACCAGTGTTGGGAGCCGTCTG 1380
CCTCCCCAGCTCAGTGCCTTTCTGCACCCCTTCTCTCCTGGGGAGCTGTCTGCATCCGCC 1440
ACCCCCTCCAACCACTGCCCTCAGCCCCCGACCTTATTTATTACCCTCCCCTCCCACACC 1500
CCCAATCTACCTGGTGATGATTTTAAGTTTGCGCGTGTCTTGGGTTGGGCTGGGGGGTTT 1560
```

CCCACATGCAGTGTCAGAGGGGCCGCCCGGTGGGGCTATCTCCGTTGCTATATTAATGGC 1620

AAGACTAAATGAAACCTAGGGCACGGCCTCCGAAGCTGCGTGTGGCCCCTTAGAGGTGAG 1680

CATCAGAGCCAGAGCAGTGAGGGGGAGACTCACCCACCCTCTCCCTCTCCCTTCAGCTCT 1740

GGGAGGCAGGCGCAGTGCCCCCCTCCCATGGGCTGGCCCAGGACCGCGGGTGAAACCTGG 1800

GTCTGTTTAGTTTCTTTGGTTTTTGTATGTTTGTTTGTTTTTGACACAGTCTCGCTTTGT 1860

TGCCCAGGCTGGGGTGCAGTGGCACGATCGCGGCTCACTGCAACCTCCACCTCCCGGGCT 1920

CAAGCGATTCTCTCACCTCAGCCTCCTGAGTAGGTGGGATTACAGATGCCCGCCACCACA 1980

CCCAGTTAATTTTTGTATTTTTAGAAGAGATGGGGTTTCTCCATGTTGGCCAGGCTGGTC 2040

TTGAACTCCTGGTCTCAAGTGATCCGCCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAG 2100

GTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCTGCCTGG 2160

TTTTTGCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTATGAACT 2220

CACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCCTCAGCC 2280

ATGAATTCACTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTCAGAGTATG 2340

GGCAAATGCTTCTGGAAAACCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTGTCGGTG 2400

ATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCCGGGTTCCTGGGTCTGGAAG 2460

GGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTTGTCCTTGCTGC 2520

TGGCAAACAGTAAAGAAACTCACTTTCCCTGTGGCACGTTATGCTTCAGAATTAAAACAA 2580

TGAAGATTAAAA 2592

Fig.5

CL4:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC 60

CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA 120

ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG 180

TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCACTGACTGCACAGCAGT 240

GAACAGGACCAACACAGTCCCTGGTCTTAAAGCACAGGTGGGCAGAGGCTGCAGACGGGC 300

TGGTCCGTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCG 360

```
GAGGTGGAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAG   420
CAGAGAATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAAC   480
                                        M  R  R  N  V  M  G  N     8
GGCCTGTCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTG   540
 G  L  S  Q  C  L  L  C  G  E  V  L  G  F  L  G  S  S  S  V    28
TTCTGCAAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGC   600
 F  C  K  D  C  R  K  K  V  C  T  K  C  G  I  E  A  S  P  G    48
CAGAAGCGGCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGG   660
 Q  K  R  P  L  W  L  C  K  I  C  S  E  Q  R  E  V  W  K  R    68
TCGGGGGCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCCTGAAGACCCCTGGC   720
 S  G  A  W  F  Y  K  G  L  P  K  Y  I  L  P  L  K  T  P  G    88
CGAGCTGATGACCCCCACTTCCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCCAGA   780
 R  A  D  D  P  H  F  R  P  L  P  T  E  P  A  E  R  E  P  R   108
AGCTCTGAGACCAGCCGCATCTACACGTGGGCCCGAGGAAGAGTCGTAGGAAGAAAGTGC   840
 S  S  E  T  S  R  I  Y  T  W  A  R  G  R  V  V  G  R  K  C   128
TGATCCACGCTGCAGCCTGGATGAGTCCTTGAAAACACCATGCGAAGTGGAAGAAGCCGG   900
AGACGAAAGGCCGCGTGTTGTGTGATCTCATCTATATGAGCAGTGGTTTCCAGTGACAGT   960
GACAGTGACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTC  1020
AGGGACCGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGG  1080
ATGGGGTTCACCCAACCCGCGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGT  1140
GAGACGGGCACAGGCTCTGCTGACCCGCCAGGGGGGGGGACAGGCTCTGCTGACCCGCCA  1200
GGGGGACCCCGCCCCGGGCTGACCCGAAGGGCCCCGGTAAAAGACACACCTGGACGAGCC  1260
CCCGCTGCTGACGCAGCTCCAGCAGGCCCCTCCAGCTGCCTGGGCTGAGGTGTCTGGTGC  1320
CTGGAACAGACTTCCCTGTGGAGGATTCCTGCCAGACCCTGCCCGGCTCCTCCCTGACCG  1380
GTCCTTGTGCCCTCACCAGACACCCTGTTGGCCATGACTCAACAAACCAGTGTTGGGAGC  1440
CGTCTGCCTCCCCAGCTCAGTGCCTTTCTGCACCCCTTCTCTCCTGGGGAGCTGTCTGCA  1500
TCCGCCACCCCCTCCAACCACTGCCCTCAGCCCCCGACCTTATTTATTACCCTCCCCTCC  1560
```

CACACCCCCAATCTACCTGGTGATGATTTTAAGTTTGCGCGTGTCTTGGGTTGGGCTGGG 1620

GGGTTTCCCACATGCAGTGTCAGAGGGGCCGCCCGGTGGGGCTATCTCCGTTGCTATATT 1680

AATGGCAAGACTAAATGAAACCTAGGGCACGGCCTCCGAAGCTGCGTGTGGCCCCTTAGA 1740

GGTGAGCATCAGAGCCAGAGCAGTGAGGGGGAGACTCACCCACCCTCTCCCTCTCCCTTC 1800

AGCTCTGGGAGGCAGGCGCAGTGCCCCCCTCCCATGGGCTGGCCCAGGACCGCGGGTGAA 1860

ACCTGGGTCTGTTTAGTTTCTTTGGTTTTTGTATGTTTGTTTGTTTTTGACACAGTCTCG 1920

CTTTGTTGCCCAGGCTGGGGTGCAGTGGCACGATCGCGGCTCACTGCAACCTCCACCTCC 1980

CGGGCTCAAGCGATTCTCTCACCTCAGCCTCCTGAGTAGGTGGGATTACAGATGCCCGCC 2040

ACCACACCCAGTTAATTTTTGTATTTTTAGAAGAGATGGGGTTTCTCCATGTTGGCCAGG 2100

CTGGTCTTGAACTCCTGGTCTCAAGTGATCCGCCCGCCTCGGCCTCCCAAAGTGCTGGGA 2160

TTACAGGTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCT 2220

GCCTGGTTTTTGCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTA 2280

TGAACTCACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCC 2340

TCAGCCATGAATTCACTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTCAG 2400

AGTATGGGCAAATGCTTCTGGAAAACCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTG 2460

TCGGTGATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCCGGGTTCCTGGGTC 2520

TGGAAGGGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTTGTCCT 2580

TGCTGCTGGCAAACAGTAAAGAAACTCACTTTCCCTGTGGCACGTTATGCTTCAGAATTA 2640

AAACAATGAAGATTAAAA 2658

Fig. 6

```
         1               15 16           30 31           45 46           60 61           75 76           90
1 NOC2   --------------- --------------- --------------- --------------- --------------- ---------------   0
2 NL1    GGCTCCTCATCTGGA ACACCTCGGGTCACC CCCGACAACGGTGGT GGGAGGGAGAGCGGC CTCCTCCTCCCTGGT GGGGCCTGTCTGGGT  90
3 LC1    GGCTCCTCATCTGGA ACACCTCGGGTCACC CCCGACAACGGTGGT GGGAGGGAGAGCGGC CTCCTCCTCCCTGGT GGGGCCTGTCTGGGT  90
4 LC2    GGCTCCTCATCTGGA ACACCTCGGGTCACC CCCGACAACGGTGGT GGGAGGGAGAGCGGC CTCCTCCTCCCTGGT GGGGCCTGTCTGGGT  90
5 LC3    GGCTCCTCATCTGGA ACACCTCGGGTCACC CCCGACAACGGTGGT GGGAGGGAGAGCGGC CTCCTCCTCCCTGGT GGGGCCTGTCTGGGT  90
6 LC4    GGCTCCTCATCTGGA ACACCTCGGGTCACC CCCGACAACGGTGGT GGGAGGGAGAGCGGC CTCCTCCTCCCTGGT GGGGCCTGTCTGGGT  90

         91             105 106         120 121         135 136         150 151         165 166         180
1 NOC2   --------------- ----------TCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG  65
2 NL1    GAAGCCCCTCTGTTC CCGAGGATCGTCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG 180
3 LC1    GAAGCCCCTCTGTTC CCGAGGATCGTCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG 180
4 LC2    GAAGCCCCTCTGTTC CCGAGGATCGTCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG 180
5 LC3    GAAGCCCCTCTGTTC CCGAGGATCGTCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG 180
6 LC4    GAAGCCCCTCTGTTC CCGAGGATCGTCCCA ACCCCCAGCCGGGTG CTCCGAGCCATGGCC GACACCATCTTCGGC AGCGGGAATGATCAG 180
```

```
        181             195 196          210 211          225 226          240 241          255 256          270
1 NOC2  TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGC-- --------------- --------------- ---------------  108
2 NL1   TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGC-- --------------- --------------- ---------------  223
3 LC1   TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGC-- --------------- --------------- ---------------  223
4 LC2   TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGCAC TGACTGCACAGCAGT GAACAGGACCAACAC AGTCCCTGGTCTTAA  270
5 LC3   TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGC-- --------------- --------------- ---------------  223
6 LC4   TGGGTTTGCCCCAAT GACCGGCAGCTTGCC CTTCGAGCCAAGCAC TGACTGCACAGCAGT GAACAGGACCAACAC AGTCCCTGGTCTTAA  270

        271             285 286          300 301          315 316          330 331          345 346          360
1 NOC2  --------------- ----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  179
2 NL1   --------------- ----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  294
3 LC1   --------------- ----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  294
4 LC2   AGCACAGGTGGGCAG AGGCTGCAGACGGGC TGGTCGGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  360
5 LC3   --------------- ----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  294
6 LC4   AGCACAGGTGGGCAG AGGCTGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CAGAGGAGGAAGCAG CACCTCAGCCCGGCG  360

        361             375 376          390 391          405 406          420 421          435 436          450
1 NOC2  GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG  269
2 NL1   GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG  384
```

```
3 LC1  GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG    384
4 LC2  GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG    450
5 LC3  GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG    384
6 LC4  GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGCGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGCGG CTGGTGGAGCGGCTG    450

       451          465 466          480 481          495 496          510 511          525 526          540
1 NOC2 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    359
2 NL1  GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    474
3 LC1  GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    474
4 LC2  GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    540
5 LC3  GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    474
6 LC4  GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG    540

       541          555 556          570 571          585 586          600 601          615 616          630
1 NOC2 TTCTGCAAAGACTGC AGGAAGAAAGTCTGC ACCAAATGTGGGATC GAGGCCTCCCCTGGC CAGAAGCGGCCCCTG TGGCTGTGTAAGATC    449
2 NL1  TTCTGCAAAGACTGC AGGAAG--------- --------------- --------------- --------------- ---------------    495
3 LC1  TTCTGCAAAGACTGC AGGAAGAAAGTCTGC ACCAAATGTGGGATC GAGGCCTCCCCTGGC CAGAAGCGGCCCCTG TGGCTGTGTAAGATC    564
4 LC2  TTCTGCAAAGACTGC AGGAAGAAAGTCTGC ACCAAATGTGGGATC GAGGCCTCCCCTGGC CAGAAGCGGCCCCTG TGGCTGTGTAAGATC    630
5 LC3  TTCTGCAAAGACTGC AGGAAGAAAGTCTGC ACCAAATGTGGGATC GAGGCCTCCCCTGGC CAGAAGCGGCCCCTG TGGCTGTGTAAGATC    564
6 LC4  TTCTGCAAAGACTGC AGGAAGAAAGTCTGC ACCAAATGTGGGATC GAGGCCTCCCCTGGC CAGAAGCGGCCCCTG TGGCTGTGTAAGATC    630
```

	631	645 646	660 661	675 676	690 691	705 706 720	
1 NOC2	TGCAGTGAGCAAAGA	GAGGTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	539
2 NL1	---------------	---GTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	567
3 LC1	TGCAGTGAGCAAAGA	GAGGTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	654
4 LC2	TGCAGTGAGCAAAGA	GAGGTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	720
5 LC3	TGCAGTGAGCAAAGA	GAGGTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	654
6 LC4	TGCAGTGAGCAAAGA	GAGGTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC	720

	721	735 736	750 751	765 766	780 781	795 796 810	
1 NOC2	CGAGCTGATGACCCC	CACTTCCGACCTTTG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	629
2 NL1	CGAGCTGATGAGCCC	CAGTTCCGACCTTGG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	657
3 LC1	CGAGCTGATGACCCC	CACTTCCGACCTTTG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	744
4 LC2	CGAGCTGATGACCCC	CACTTCCGACCTTTG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	810
5 LC3	CGAGCTGATGACCCC	CACTTCCGACCTTTG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	744
6 LC4	CGAGCTGATGACCCC	CACTTCCGACCTTTG	CCCACGGAACCGGCA	GAGCGAGAGCCCAGA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	810

	811	825 826	840 841	855 856	870 871	885 886 900	
1 NOC2	GCCCGAGGAAGAGT-	---------------	---------------	---------------	---------------	---------------	643
2 NL1	GCCCGAGGAAGAGT-	---------------	---------------	---------------	---------------	---------------	671
3 LC1	GCCCGAGGAAGAGT-	---------------	---------------	---------------	---------------	---------------	758

```
4 LC2  GCCCGAGGAAGAGT- ---------- ---------- ---------- ---------- ----------   824
5 LC3  GCCCGAGGAAGAGTC GTAGGAAGAAAGTGC TGATCCACGCTGCAG CCTGGATGAGTCCTT GAAAACACCATGCGA AGTGGAAGAAGCCGG   834
6 LC4  GCCCGAGGAAGAGTC GTAGGAAGAAAGTGC TGATCCACGCTGCAG CCTGGATGAGTCCTT GAAAACACCATGCGA AGTGGAAGAAGCCGG   900

          901        915 916        930 931        945 946        960 961        975 976        990
1 NOC2 ---------- ---------- ----------G GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   689
2 NL1  ---------- ---------- ----------G GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   717
3 LC1  ---------- ---------- ----------G GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   804
4 LC2  ---------- ---------- ----------G GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   870
5 LC3  AGACGAAAGGCCGCG TGTTGTGTGATCTCA TCTATATGAGCAGTG GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   924
6 LC4  AGACGAAAGGCCGCG TGTTGTGTGATCTCA TCTATATGAGCAGTG GTTTCCAGTGACAGT GACAGTGACTCGGAT CTTAGCTCCTCCAGC   990

          991        1005 1006      1020 1021      1035 1036      1050 1051      1065 1066      1080
1 NOC2 CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG   779
2 NL1  CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG   807
3 LC1  CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG   894
4 LC2  CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG   960
```

```
5 LC3   CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG  1014
6 LC4   CTAGAGGACAGACTC CCATCCACTGGGGTC AGGGACCGGAAAGGC GACAAACCCTGGAAG GAGTCAGGTGGCAGC GTGGAGGCCCCCAGG  1080

        1081       1095 1096      1110 1111      1125 1126      1140 1141      1155 1156      1170
1 NOC2  ATGGGGTTCACCCAC CCGCCGGGCCACCTC TCTGGGTGCCAGAGC AGCCTGGCCAGTGGT GAGACGGG------- ---------------   847
2 NL1   ATGGGGTTCACCCAA CCCGCGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA   897
3 LC1   ATGGGGTTCACCCAA CCCGCGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA   984
4 LC2   ATGGGGTTCACCCAA CCCGCGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA  1050
5 LC3   ATGGGGTTCACCCAA CCCGCGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA  1104
6 LC4   ATGGGGTTCACCCAA CCCGCGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA  1170

        1171       1185 1186      1200 1201      1215 1216      1230 1231      1245 1246      1260
1 NOC2  --------GACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC   929
2 NL1   GGGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC   987
3 LC1   GGGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC  1074
4 LC2   GGGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC  1140
5 LC3   GGGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC  1194
6 LC4   GGGGGGGGGACAGGC TCTGCTGACCCGCCA GGGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAAGAC ACACCTGGACGAGCC  1260
```

	1261	1275 1276	1290 1291	1305 1306	1320 1321	1335 1336	1350	
1 NOC2	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1019
2 NL1	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1077
3 LC1	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1164
4 LC2	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1230
5 LC3	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1284
6 LC4	CCCGCTGCTGACGCA	GCTCCAGCAGGCCCC	TCCAGCTGCCTGGGC	TGAGGTGTCTGGTGC	CTGGAACAGACTTCC	CTGTGGAGGATTCCT		1350

	1351	1365 1366	1380 1381	1395 1396	1410 1411	1425 1426	1440	
1 NOC2	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1109
2 NL1	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1167
3 LC1	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1254
4 LC2	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1320
5 LC3	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1374
6 LC4	GCCAGACCCTGCCCG	GCTCCTCCCTGACCG	GTCCTTGTGCCCTCA	CCAGACACCCTGTTG	GCCATGACTCAACAA	ACCAGTGTTGGGAGC		1440

	1441	1455 1456	1470 1471	1485 1486	1500 1501	1515 1516	1530	
1 NOC2	CGTCTGCCTCCCCAG	CTCAGTGCCTTTCTG	CACCCCTTCTCTCCT	GGGGAGCTGTCTGCA	TCCGCCACCCCCTCC	AACCACTGCCCTCAG		1199
2 NL1	CGTCTGCCTCCCCAG	CTCAGTGCCTTTCTG	CACCCCTTCTCTCCT	GGGGAGCTGTCTGCA	TCCGCCACCCCCTCC	AACCACTGCCCTCAG		1257
3 LC1	CGTCTGCCTCCCCAG	CTCAGTGCCTTTCTG	CACCCCTTCTCTCCT	GGGGAGCTGTCTGCA	TCCGCCACCCCCTCC	AACCACTGCCCTCAG		1344

```
4 LC2   CGTCTGCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCCT GGGGAGCTGTCTGCA TCCGCCACCCCCTCC AACCACTGCCCTCAG   1410
5 LC3   CGTCTGCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCCT GGGGAGCTGTCTGCA TCCGCCACCCCCTCC AACCACTGCCCTCAG   1464
6 LC4   CGTCTGCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCCT GGGGAGCTGTCTGCA TCCGCCACCCCCTCC AACCACTGCCCTCAG   1530

        1531       1545 1546       1560 1561       1575 1576       1590 1591       1605 1606       1620
1 NOC2  CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1289
2 NL1   CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1347
3 LC1   CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1434
4 LC2   CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1500
5 LC3   CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1554
6 LC4   CCCCCGACCTTATTT ATTACCCTCCCCTCC CACACCCCCAATCTA CCTGGTGATGATTTT AAGTTTGCGCGTGTC TTGGGTTGGGCTGGG   1620

        1621       1635 1636       1650 1651       1665 1666       1680 1681       1695 1696       1710
1 NOC2  GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1379
2 NL1   GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1437
3 LC1   GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1524
4 LC2   GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1590
5 LC3   GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1644
6 LC4   GGGTTTCCCACATGC AGTGTCAGAGGGGCC GCCCGGTGGGGCTAT CTCCGTTGCTATATT AATGGCAAGACTAAA TGAAACCTAGGGCAC   1710
```

		1711	1725 1726	1740 1741	1755 1756	1770 1771	1785 1786 1800	
1	NOC2	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1469
2	NL1	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1527
3	LC1	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1614
4	LC2	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1680
5	LC3	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1734
6	LC4	GGCCTCCGAAGCTGC	GTGTGGCCCCTTAGA	GGTGAGCATCAGAGC	CAGAGCAGTGAGGGG	GAGACTCACCCACCC	TCTCCCTCTCCCTTC	1800

		1801	1815 1816	1830 1831	1845 1846	1860 1861	1875 1876 1890	
1	NOC2	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1559
2	NL1	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1617
3	LC1	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1704
4	LC2	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1770
5	LC3	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1824
6	LC4	AGCTCTGGGAGGCAG	GCGCAGTGCCCCCCT	CCCATGGGCTGGCCC	AGGACCGCGGGTGAA	ACCTGGGTCTGTTTA	GTTTCTTTGGTTTTT	1890

		1891	1905 1906	1920 1921	1935 1936	1950 1951	1965 1966 1980	
1	NOC2	GTATGTTTGTTTGTT	TTTGACACAGTCTCG	CTTTGTTGCCCAGGC	TGGGGTGCAGTGGCA	CGATCGCGGCTCACT	GCAACCTCCACCTCC	1649
2	NL1	GTATGTTTGTTTGTT	TTTGACACAGTCTCG	CTTTGTTGCCCAGGC	TGGGGTGCAGTGGCA	CGATCGCGGCTCACT	GCAACCTCCACCTCC	1707

```
3 LC1  GTATGTTTGTTTGTT TTTGACACAGTCTCG CTTTGTTGCCCAGGC TGGGGTGCAGTGGCA CGATCGCGGCTCACT GCAACCTCCACCTCC  1794
4 LC2  GTATGTTTGTTTGTT TTTGACACAGTCTCG CTTTGTTGCCCAGGC TGGGGTGCAGTGGCA CGATCGCGGCTCACT GCAACCTCCACCTCC  1860
5 LC3  GTATGTTTGTTTGTT TTTGACACAGTCTCG CTTTGTTGCCCAGGC TGGGGTGCAGTGGCA CGATCGCGGCTCACT GCAACCTCCACCTCC  1914
6 LC4  GTATGTTTGTTTGTT TTTGACACAGTCTCG CTTTGTTGCCCAGGC TGGGGTGCAGTGGCA CGATCGCGGCTCACT GCAACCTCCACCTCC  1980

       1981        1995 1996       2010 2011       2025 2026       2040 2041       2055 2056       2070
1 NOC2 CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  1739
2 NL1  CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  1797
3 LC1  CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  1884
4 LC2  CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  1950
5 LC3  CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  2004
6 LC4  CGGGCTCAAGCGATT CTCTCACCTCAGCCT CCTGAGTAGGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTTGTATTTTTAG  2070

       2071        2085 2086       2100 2101       2115 2116       2130 2131       2145 2146       2160
1 NOC2 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  1829
2 NL1  AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  1887
3 LC1  AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  1974
4 LC2  AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  2040
```

```
5 LC3  AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  2094
6 LC4  AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGGTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA  2160

       2161       2175 2176       2190 2191       2205 2206       2220 2221       2235 2236       2250
1 NOC2 TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  1919
2 NL1  TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  1977
3 LC1  TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  2064
4 LC2  TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  2130
5 LC3  TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  2184
6 LC4  TTACAGGTGTGAGCC ACCGCACCCAATCCT ATTAGGTTTCTTTGA ATCCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT  2250

       2251       2265 2266       2280 2281       2295 2296       2310 2311       2325 2326       2340
1 NOC2 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2009
2 NL1  TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2067
3 LC1  TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2154
4 LC2  TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2220
5 LC3  TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2274
6 LC4  TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACTCACTTGCTG AAGAGCAGCGTTCAG GTGCATCCCCAGCCA GGGCACGTGGCTCCC  2340
```

```
          2341           2355 2356        2370 2371       2385 2386       2400 2401       2415 2416       2430
1 NOC2  TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2099
2 NL1   TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2157
3 LC1   TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2244
4 LC2   TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2310
5 LC3   TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2364
6 LC4   TCAGCCATGAATTCA CTTCTCTTCAGGAGG TTTGGCTTGGCATGA AAATACTTCATTCAG AGTATGGGCAAATGC TTCTGGAAAACCCTT   2430

          2431           2445 2446        2460 2461       2475 2476       2490 2491       2505 2506       2520
1 NOC2  CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2189
2 NL1   CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2247
3 LC1   CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2334
4 LC2   CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2400
5 LC3   CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2454
6 LC4   CCCTGAAGAGAGAGA ACGTGTGTGTGTGTG TCGGTGATCACACCC TCCCATCCTTCCTGC CTCCTGCCCCAAACC CCGGGTTCCTGGGTC   2520

          2521           2535 2536        2550 2551       2565 2566       2580 2581       2595 2596       2610
1 NOC2  TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT   2279
2 NL1   TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT   2337
```

3 LC1 TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT 2424

4 LC2 TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT 2490

5 LC3 TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT 2544

6 LC4 TGGAAGGGCCTTCTC TCCAAGCTGGGAGCT CCTGGGCCCCCACCA TTCACTTTTTGTCCT TGCTGCTGGCAAACA GTAAAGAAACTCACT 2610

2611 2625 2626 2640 2641 2655 2656

1 NOC2 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2327

2 NL1 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2385

3 LC1 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2472

4 LC2 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2538

5 LC3 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2592

6 LC4 TTCCCTGTGGCACGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2658

Fig. 7

1 15 16 30 31 45 46 60 61 75 76 90

1 NOC2 MADTIFGSGNDQWVC PNDRQLALRAKLQTG WSVHTYQTEKQRRKQ HLSPAEVEAILQVIQ RAERLDVLEQQRIGR LVERLETMRRNVMGN 90

2 NL1 MADTIFGSGNDQWVC PNDRQLALRAKLQTG WSVHTYQTEKQRRKQ HLSPAEVEAILQVIQ RAERLDVLEQQRIGR LVERLETMRRNVMGN 90

3 LC1 MADTIFGSGNDQWVC PNDRQLALRAKLQTG WSVHTYQTEKQRRKQ HLSPAEVEAILQVIQ RAERLDVLEQQRIGR LVERLETMRRNVMGN 90

```
4 LC2   --------------- --------------- --------------- --------------- --------------- -------MRRNVMGN   8
5 LC3   MADTIFGSGNDQWVC PNDRQLALRAKLQTG WSVHTYQTEKQRRKQ HLSPAEVEAILQVIQ RAERLDVLEQQRIGR LVERLETMRRNVMGN  90
6 LC4   --------------- --------------- --------------- --------------- --------------- -------MRRNVMGN   8

        91          105 106         120 121         135 136         150 151         165 166         180
1 NOC2  GLSQCLLCGEVLGFL GSSSVFCKDCRKKVC TKCGIEASPGQKRPL WLCKICSEQREVWKR SGAWFYKGLPKYILP LKTPGRADDPHFRPL 180
2 NL1   GLSQCLLCGEVLGFL GSSSVFCKDCRK--- --------------- -----------VWKR SGAWFYKGLPKYILP LKTPGRADEPQFRPW 151
3 LC1   GLSQCLLCGEVLGFL GSSSVFCKDCRKKVC TKCGIEASPGQKRPL WLCKICSEQREVWKR SGAWFYKGLPKYILP LKTPGRADDPHFRPL 180
4 LC2   GLSQCLLCGEVLGFL GSSSVFCKDCRKKVC TKCGIEASPGQKRPL WLCKICSEQREVWKR SGAWFYKGLPKYILP LKTPGRADDPHFRPL  98
5 LC3   GLSQCLLCGEVLGFL GSSSVFCKDCRKKVC TKCGIEASPGQKRPL WLCKICSEQREVWKR SGAWFYKGLPKYILP LKTPGRADDPHFRPL 180
6 LC4   GLSQCLLCGEVLGFL GSSSVFCKDCRKKVC TKCGIEASPGQKRPL WLCKICSEQREVWKR SGAWFYKGLPKYILP LKTPGRADDPHFRPL  98

        181         195 196         210 211         225 226         240 241         255 256         270
1 NOC2  PTEPAEREPRSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKPWK ESGGSVEAPRMGFTH PPGHLSGCQSSLASG 270
2 NL1   PTEPAEREPRSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKPWK ESGGSVEAPRMGFTQ PAGHLFGLQSSLASG 241
3 LC1   PTEPAEREPRSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKPWK ESGGSVEAPRMGFTQ PAGHLFGLQSSLASG 270
4 LC3   PTEPAEREPRSSETS RIYTWARGRVVGRKC --------------- --------------- --------------- --------------- 210
5 LC4   PTEPAEREPRSSETS RIYTWARGRVVGRKC --------------- --------------- --------------- --------------- 128
```

```
6 LC2  PTEPAEREPRSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKPWK ESGGSVEAPRMGFTQ PAGHLFGLQSSLASG   188

       271          285 286         300 301         315 316          330
1 NOC2 ETGTGSADPPGG--- -------PRPGLTRR APVKDTPGRAPAADA APAGPSSCLG   315
2 NL1  ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG   296
3 LC1  ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG   325
4 LC2  ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG   243
5 LC3  --------------- --------------- --------------- ----------   210
6 LC4  --------------- --------------- --------------- ----------   128
```